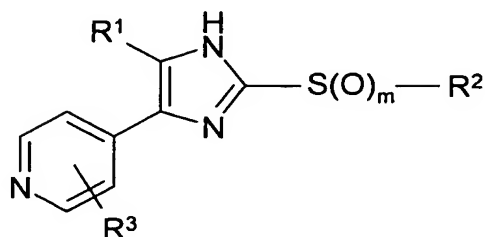


WE CLAIM

1. A 2-thio-substituted imidazole derivative of the formula I

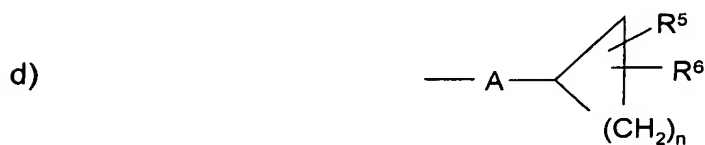


in which

R^1 is C_1 - C_6 -alkyl, C_3 - C_7 -cycloalkyl or aryl which is unsubstituted or substituted by a halogen atom, by C_1 - C_6 -alkyl or by halo- C_1 - C_6 -alkyl;

R^2 is selected from the group consisting of

- a) aryl- C_1 - C_4 -alkyl, where the aryl radical may have one, two or three substituents independently of one another selected from the group consisting of C_1 - C_6 -alkyl, C_1 - C_6 -alkoxy, halogen, C_1 - C_6 -alkylsulfanyl, C_1 - C_6 -alkylsulfinyl, C_1 - C_6 -alkylsulfonyl and hydroxyl, and
- b) C_1 - C_6 -alkyl which is unsubstituted or substituted by CN or halogen;



R^3 is selected from the group consisting of

- a) NR^4R^{10} ;
- b) $\text{NR}^7\text{COR}^{10}$;
- c) $\text{NR}^7\text{COOR}^{10}$;
- d) $\text{NR}^7\text{CONR}^7\text{R}^{10}$;
- e) $\text{NR}^7\text{CONR}^7\text{COR}^{10}$;
- f) OR^{10} ;
- g) $\text{S(O)}_m\text{R}^{10}$
- h) halogen;
- i) OH ;
- j) N_3
- k) NH_2
- l) SH ;

where R^3 is not OH , halogen, $\text{C}_1\text{-C}_6\text{-alkylthio}$ or $\text{C}_1\text{-C}_6\text{-alkoxy}$ if R^2 is phenyl- $\text{C}_1\text{-C}_4\text{-alkyl}$ and the phenyl radical has a $\text{C}_1\text{-C}_6\text{-alkylsulfanyl}$, $\text{C}_1\text{-C}_6\text{-alkylsulfinyl}$ or $\text{C}_1\text{-C}_6\text{-alkylsulfonyl}$ substituent;

R^4 is H or a physiologically cleavable group,

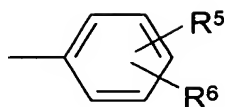
R^5 and R^6 , which may be identical or different, are H , halogen, OH , $\text{C}_1\text{-C}_6\text{-alkoxy}$, $\text{C}_1\text{-C}_6\text{-alkyl}$, halo- $\text{C}_1\text{-C}_6\text{-alkyl}$, $\text{C}_1\text{-C}_6\text{-alkylsulfanyl}$, NH_2 , $\text{C}_1\text{-C}_6\text{-alkylamino}$ or di- $\text{C}_1\text{-C}_6\text{-alkylamino}$;

R^7 is R^4 , C_1 - C_6 -alkyl or benzyl;

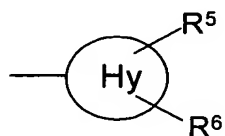
R^{10} has one of the meanings below:

a) $A - B$

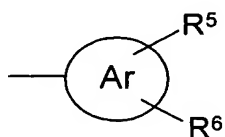
b)



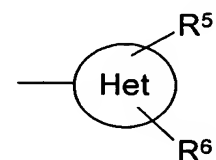
c)



d)



e)



f) C_1 - C_6 -alkyl which is substituted by 2 or 3 phenyl groups;

g) Trifluoromethyl

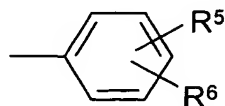
A is straight-chain or branched C_1 - C_6 -alkylene, C_2 - C_6 -alkenylene or C_3 -alkynylene;

B is selected from the group consisting of

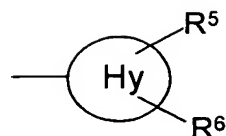
a)

H

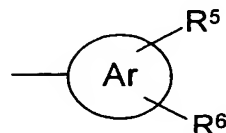
b)



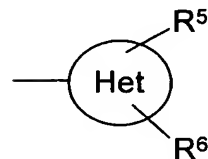
c)



d)



e)

f) OC₁-C₆-alkyl;g) NR¹¹R¹²;

h) OH;

i) halogen;

j) C₁-C₆-alkylsulfanyl

R¹¹ and R¹², which may be identical or different, are H, C₁-C₆-alkyl or phenyl;

Hy is a 3- to 10-membered non-aromatic mono-, bi- or tricyclic carbocycle which may or may not be fused with a benzene ring;

Ar is a 5- or 6-membered aromatic heterocycle which has 1, 2 or 3 heteroatoms independently of one another selected from the group consisting of O, S and N and which may or may not be fused with a benzene ring;

Het is a 5- or 6-membered non-aromatic heterocycle which has 1, 2 or 3 heteroatoms independently of one another selected from the group consisting of O, S and N, which may or may not be fused with a benzene ring and which may or may not be bridged bicyclically or tricyclically;

m is 0.1 or 2;

n is 1, 2, 3, 4 or 5;

2. The compound as claimed in claim 1 of the formula I

in which

5 R^1 is C_1 - C_6 -alkyl, C_3 - C_7 -cycloalkyl or aryl which may or may not be substituted by a halogen atom;

R^2 is selected from the group consisting of

10 a) aryl- C_1 - C_4 -alkyl, where the aryl radical may have one, two or three substituents independently of one another selected from the group consisting of C_1 - C_6 -alkyl, C_1 - C_6 -alkoxy, halogen, C_1 - C_6 -alkylsulfanyl, C_1 - C_6 -alkylsulfinyl, C_1 - C_6 -alkylsulfonyl and hydroxyl, and

15 b) C_1 - C_6 -alkyl which may or may not be substituted by CN; and

c) C_3 - C_7 -cycloalkyl;

20 R^3 is selected from the group consisting of

a) NR^4R^{10}

b) NR^7COR^{10} .

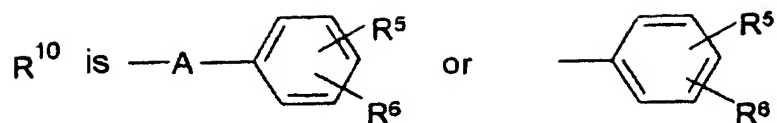
25 c) halogen and

d) C_1 - C_6 -alkoxy,

30 e) C_1 - C_6 -alkylthio

where R^3 is not OH, halogen, C_1 - C_6 -alkylthio or C_1 - C_6 -alkoxy if R^2 is phenyl- C_1 - C_4 -alkyl the phenyl radical has a C_1 - C_6 -alkylsulfanyl, C_1 - C_6 -alkylsulfinyl or C_1 - C_6 -alkylsulfonyl substituent;

R^4 is H;



or, if R^3 is NR^7COR^{10} , R^8 ,

R^5 and R^6 , which may be identical or different, are H, halogen, C_1 - C_6 -alkoxy or C_1 - C_6 -alkyl;

R^7 is H, C_1 - C_6 -alkyl or benzyl;

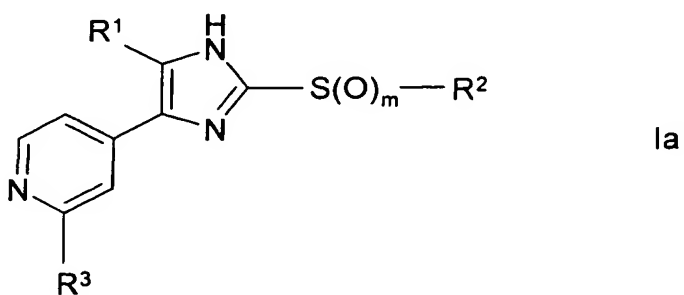
R^8 is C_1 - C_4 -alkyl, C_3 - C_6 -cycloalkyl or phenyl, where the phenyl group may have one or two substituents independently of one another selected from the group consisting of C_1 - C_4 -alkyl, C_1 - C_4 -alkoxy and halogen;

A is straight-chain or branched C_1 - C_6 -alkylene, C_2 - C_6 -alkenylene or C_3 -alkynylene and

m is 0.1 or 2

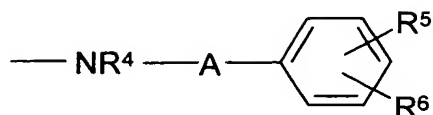
or a tautomer, an optic isomer or a physiologically acceptable salt thereof.

3. The compound as claimed in claim 1 or 2 of the formula Ia



in which R^1 , R^2 , R^3 and m are as defined in claim 1.

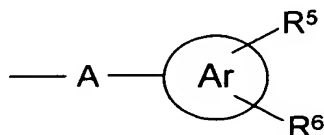
4. The compound as claimed in claim 1 or 2 where R^3 is



where A , R^5 and R^6 are as defined in claim 1.

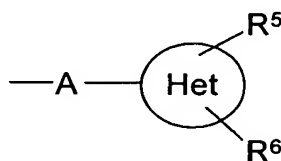
5. The compound as claimed in claim 1 of the formula I in which R^{10} is one of the radicals below:

a)



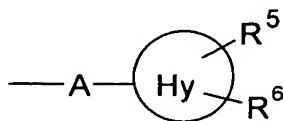
where Ar is a 5- or 6-membered aromatic heterocycle which has a heteroatom selected from the group consisting of N, O and S; A is C_1 - C_3 -alkylene and may be substituted by a phenyl radical and R^5 and R^6 are H;

b)



where Het is a 5- or 6-membered non-aromatic heterocycle which has an O or N heteroatom; A is C_1 - C_3 -alkylene and R^5 and R^6 are H;

c)



where A is C_1 - C_6 -alkylene; R^5 and R^6 are H and Hy is cyclopentyl or cyclohexyl;

d) cyclopentyl or cyclohexyl;

e) phenyl-C₁-C₆-alkyl, where the alkyl radical may have an additional phenyl substituent; and

f) C₂-C₆-alkenyl which is substituted by phenyl.

6. The compound as claimed in claim 1 of the formula I in which R³ is A-B and B is selected from the group consisting of NR¹¹R¹², OC₁-C₆-alkyl and OH and A, R¹¹ and R¹² are as defined in claim 1.

7. The compound as claimed in claim 1 of the formula I in which R³ is NR⁷COR⁸, where R⁸ is selected from the group consisting of -O-C₁-C₄-alkylphenyl, phenyl and C₂-C₆-alkenyl which is substituted by phenyl.

8. The compound as claimed in any of the preceding claims where A is C₁-C₂-alkylene.

9. The compound as claimed in any of the preceding claims where A is ethylidene.

10. The compound as claimed in any of the preceding claims where R⁵ and R⁶ are H.

11. The compound as claimed in any of the preceding claims where R¹ is halogen-substituted phenyl, CF₃-substituted phenyl or C₁-C₆-alkyl-substituted phenyl.

12. The compound as claimed in any of the preceding claims where R² is benzyl or C₁-C₆-alkyl.

13. A pharmaceutical composition, comprising at least one compound as claimed in any of claims 1 to 12, if appropriate together with one or more pharmaceutically acceptable carriers and/or additives.

5 14. The use of at least one compound as claimed in any of claims 1 to 12 for preparing a pharmaceutical composition for treating disorders associated with a disturbed immune system.

10 15. A method for treating disorders associated with a disturbed immune system, characterized in that an amount of a compound of the formula I as claimed in any of claims 1 to 12 sufficient to have immunomodulating action and/or to inhibit the release of cytokine is administered to a person in need of such a treatment.